REMARKS

I. Introduction

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Claims 4, 22 and 25-29 are currently being amended.

Claim 24 is requested to be cancelled. The cancellation of claims does not constitute acquiescence in the propriety of any rejection set forth by the Examiner. Claim 24 is canceled because it is a duplicate of amended claim 4.

This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claims remain under examination in the application, is presented, with an appropriate defined status identifier.

Exemplary support for the amendment to claim 4 is found in the specification on page 12, lines 8-10. Exemplary support for the amendments to claims 24-29 is found in originally filed claim 11. Exemplary support for the amendment to claim 27 is found in the specification on page 10, line 24.

Upon entry of this Amendment, claims 2, 4-6, 11-13, 20-23 and 25-29 will remain pending in the application.

II. Response to Issues Raised by Examiner in Outstanding Office Action

a. Allowed Claims

The Examiner states that claims 2, 11-13, 20, 21 and 23 are allowed.

b. Claim Objections

The Examiner asserts that claim 27 ends with a semi-colon rather than a period. Applicants have amended claim 27 to end with a period. Therefore, Applicants respectfully request reconsideration and withdrawal of the objection.

c. Claim Rejections - 35 U.S.C. § 112, Second Paragraph

Claims 25-29 are rejected by the Examiner under 35 U.S.C. § 112, second paragraph as being allegedly indefinite. Applicants respectfully request reconsideration and withdrawal of the rejection.

The Examiner asserts that in claim 27, the recitation "...regulates growth factor stimulation of cellular differentiation and cellular proliferation" is indefinite. Applicants respectfully disagree. However, to expedite prosecution, Applicants have replaced this phrase with "has Grb-2 binding activity." Support for this amendment is found in the specification on page 10, line 24.

The Examiner also asserts that claims 25-29 are indefinite because the limitations of these claims, which depend on claim 11, modify the nucleic acid of claim 11 such that it no longer would be the nucleic acid of claim 11. Applicants do not agree with the Examiner. However, to expedite prosecution, Applicants have amended claims 25-29 to be independent claims.

Finally, the Examiner asserts that claim 29(a) is unclear. Applicants do not agree with the Examiner. However, to expedite prosecution, Applicants have amended claim 29 to be an independent claim, by amending part (a) to specify the polypeptides set forth in claims 11(a), 25(a) and 28(a).

d. Claim Rejections - 35 U.S.C. § 112, First Paragraph

i. Rejection of Claims 4-6, 22, 24 and 25-29 for Alleged Lack of Written Description

Claims 4-6, 22, 24 and 25-29 are rejected by the Examiner under 35 U.S.C. § 112, first paragraph for lack of written description. Applicants respectfully request reconsideration and withdrawal of the rejection.

The Examiner asserts that Applicants have not adequately described a genus of nucleic acid probes **comprising** a nucleotide sequence that encodes a polypeptide comprising

at least 10 contiguous amino acids of SEQ ID NO: 1. Applicants have amended the claims by replacing the term "comprising" with the term "consisting of", as suggested by the Examiner.

ii. Rejection of Claims 4-6, 22, 24 and 25-29 for Alleged Lack of Enablement

Claims 4-6, 22, 24 and 25-29 are rejected by the Examiner under 35 U.S.C. § 112, first paragraph for lack of enablement. Applicants respectfully request reconsideration and withdrawal of the rejection.

The Examiner asserts that the specification, while being enabling for nucleic acid encoding a FRS2 polypeptide, does not reasonably provide enablement for any nucleic acid encoding any FRS2 polypeptide. The Examiner states that the currently claimed genus is not to those molecules that can detect nucleic acid molecules encoding a FRS2 polypeptide, but rather to any molecule which comprises a nucleotide sequence which encodes a mere contiguous amino acids of SEQ ID NO: 1. Applicants respectfully disagree. However, to expedite prosecution, Applicants have amended the rejected claims to be directed to a nucleic acid probe consisting of a nucleotide sequence that encodes various FRS2 polypeptides, wherein said probe binds to a DNA molecule or an RNA molecule encoding FRS2 polypeptide. As stated in Applicants' November 7, 2003 response, the specification provides sufficient enablement for a person of ordinary skill in the art to make and use the nucleic acid molecules of the claimed invention. For example, on page 12, lines 8-10 of the specification it states

> [a]nother aspect of the invention features a nucleic acid probe that can detect nucleic acid molecules encoding a FRS2 polypeptide in a sample.

On page 12, lines 21, through page 13, line 1 of the specification it states

> [t]]he nucleic acid probe can be labeled with a reporter molecule or molecules. The term 'reporter molecule' refers to a molecule that is conjugated to the nucleic acid probe or is contained within the nucleic acid probe. The reporter molecule allows the detection of the probe by methods used in the art. Reporter molecules are chosen from, but limited to, the group

> consisting of an enzyme, such as a peroxidase, a radioactive element, or an avidin molecule.

On page 14, lines 3-6 of the specification it states

> [m]ethods for using the probes include detecting the presence or amount of FRS2 RNA in a sample by contacting the sample with a nucleic acid probe under conditions such that hybridization occurs.

Additionally, on page 30, line 28, through page 31 line 14 of the specification it states

> Another aspect of the invention relates to a method of diagnosing an abnormal condition associated with cell proliferation or cell differentiation in an organism. The abnormal condition can be associated with an aberration in a signal transduction pathway characterized by an interaction between a FRS2 polypeptide and a natural binding partner. The method comprises of the step of detecting an abnormal interaction.
>
> The term 'detecting an abnormal interaction' defines a method of identifying a FRS2 molecule with an aberration in its activity. Detection is accomplished by using an antibody or antibody fragment of the invention, a nucleic acid probe of the invention, or a compound of the invention.

CONCLUSION

The present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

It is acknowledged that the foregoing amendments are submitted after final rejection. However, because the amendments do not introduce new matter or raise new issues, and because the amendments either place the application in condition for allowance or at least in better condition for appeal, entry thereof by the Examiner is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant(s) hereby petition(s) for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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By _____

FOLEY & LARDNER LLP
Customer Number: 22428
22428
PATENT TRADEMARK OFFICE
Telephone: (202) 672-5475
Facsimile: (202) 672-5399

Beth A. Burrous
Attorney for Applicant
Registration 35,087